Uintah Highlands Water Improvement District

Water Conservation Plan

December 2019

Updated By

Matthew L. Robertson, P.E.

JONES & ASSOCIATES

Consulting Engineers

RESOLUTION 2019-09
Water Conservation Plan
December 2019

BE IT HEREBY RESOLVED, by the Board of Trustees for the Uintah Highlands Improvement District, State of Utah, as follows:

WHEREAS, the Uintah Highlands Improvement District has a Water Conservation Plan (in accordance with U.C.A. 73-10-32) that establishes conservation planning efforts identifying water supply inventory for both present and future water requirements and establishes implementation procedures;

WHEREAS, the District Engineer has reviewed and updated the Water Conservation Plan,

WHEREAS, the Board of Trustees has reviewed the District Engineer's recommendations,

WHEREAS, a public hearing was held on December 12, 2019.

NOW THEREFORE BE IT RESOLVED, the Uintah Highlands Improvement District hereby adopts the **Water Conservation Plan**, dated December 12, 2019, for the geographic District boundary. The plan was updated by Matthew L. Robertson, District Engineer.

PASSED AND ADOPTED by the Board of Trustees of the Uintah Highlands Improvement District, on December 12, 2019.

CHAIRMAN, William J. Galbraith III

ATTEST:

Jerilyn J. Call, District Clerk

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SECTION I - SYSTEM PROFILE

SERVICE AREA

The Uintah Highlands Improvement District (UHID) occupies approximately 1,200 acres (1.89 square miles). Of this area, 25 acres is used by a school and three churches, 110 acres makes up the mountain hillside portion of the district, and there is one 5 acre park (See attached map). The remaining land is made up of residential and commercial uses. Streets and hard surfaced areas were not subtracted out.

UHID currently provides culinary water to approximately 2,480 people through 941 connections. This water is intended for indoor, sanitary, and commercial uses. Water for outdoor and landscaping needs is provided and managed by the Weber Basin Water Conservancy District.

Table 1.1 below lists each type of connection and the total number of each.

Table 1.1 - Number of Connections

Connection Type	Total
Residential / Domestic	895
Commercial	40
Institutional	6
Industrial	0
Unmetered	0
	941

SUPPLY

The UHID supplies its system through water purchased at wholesale directly from the Weber Basin Water Conservancy District (WBWCD) and from a District-owned well and springs. The purchase from WBWCD is done through “take or pay” contracts. These contracts specify that WBWCD commits to supplying the contract amount of water and the District agrees to pay for the total contract amount annually, whether or not it is all used. The average flows from the springs and the available supply from the well were analyzed along with the contracted water from WBCD to determine the total available supply. Table 1.2 below shows a breakdown of the amount supplied in 2018 and the total supply available.

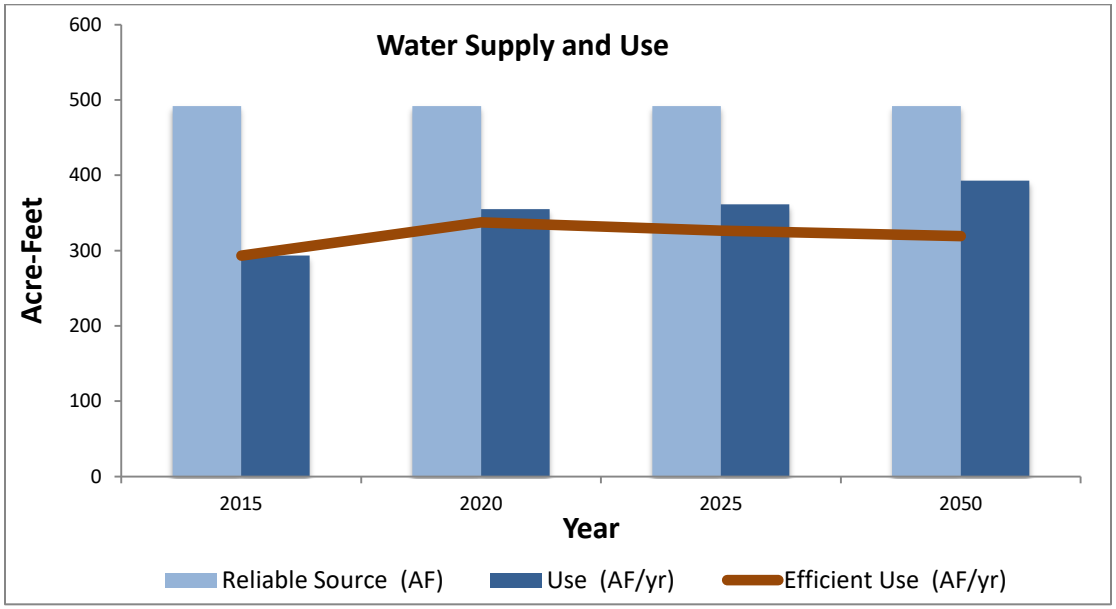
Table 1.2 - Existing Water Sources

Source	2018 Total Use (Ac-Ft)	Available Supply (Ac-ft)
Well	6.5	161
Springs	54.4	84
WBWCD Contract	228.8	247
	289.7	**492**

WATER SUPPLY & USE

As illustrated in graph 1.1 below, the District's water supply verse projected use provides a sufficient amount of water through the year 2050. The reliable source was determined as described above. The use was determined by using existing water use data and projecting that use into the future based on the estimated growth. It is anticipated that the total number of ERCs at build-out will be 1,670 compared to 1,247 ERCs in 2015. Build-out is expected before 2050.

Graph 1.1 - Water Supply and Use



FUTURE WATER SOURCES

The UHID Capital Facilities Plan, completed in 2012, indicates that build-out of the District could occur as early as 2031. The plan also indicated that the projected number of ERCs at build-out would be 1,459. Recent zoning changes and growth have changed this projection and recent analysis estimates the number of ERCs at build-out to be 1,670. Based on appropriated water rights and average production of the well and springs, UHID has an annual available water supply of 492 acre-feet. This exceeds the projected annual water use, or needed supply, at build-out of 393 acre-feet. If water use projections increase and additional supply is needed, the District would purchase additional water from WBCWD.

WATER MEASUREMENT & BILLING

Meters: All of the connections to the water system are metered and read monthly using the automated Badger Disc Meter System. Table 1.3 below shows the District's current metered connections.

Table 1.3 – Metered Connections

Connection Type	Percentage of System	Reading Frequency	Replacement Schedule*
Residential	95%	Monthly	As Needed
Commercial	4.25%	Monthly	As Needed
Industrial	0	-	-
Institutional	>1%	Monthly	As Needed
Government	>1%	Monthly	As Needed

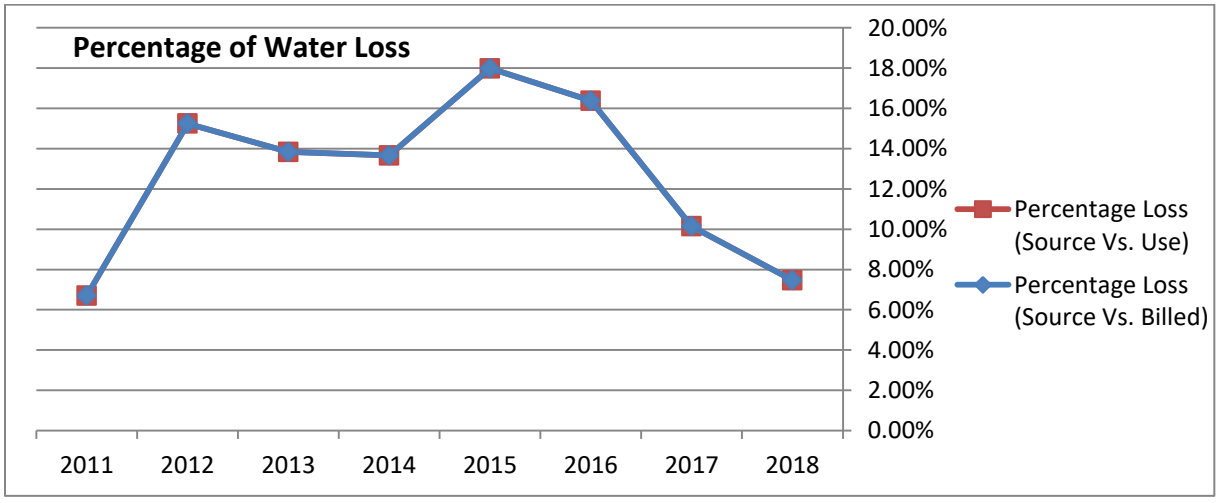
**The District plans to create a replacement schedule, see Section 2 Best Management Practices and Implementation. Meters are also replaced rather than calibrated.*

New Development: All new developments are required to follow the Weber County Land Use Subdivision Code. As part of the approval process, the Developer of the proposed subdivision is required to obtain a "Will-Serve" letter from UHID for water. Upon written request, UHID reviews the proposed subdivision, models the water requirements in the UHID system to check pressure and serviceability, and checks the available water resources against the current Capital Facilities Plan. If the proposed subdivision meets the requirements of the water model and if there is enough water to provide for the subdivision, then a "Will-Serve" letter is provided. Once this letter is provided, the Developer must then submit the Plat and Improvement Plans to UHID for approval and signature. During construction, UHID staff oversees and inspects the water system to ensure the installation meets UHID Standards.

SYSTEM WATER LOSS CONTROL

The District monitors the amount of water taken at each of its sources. The amount of water produced from year to year from the wells and springs will vary depending on groundwater and snowpack conditions. In 2010, the District replaced the meters at the water sources which have provided more accurate measurements. Graph 1.2 below shows the percentage of water loss between the source and the use (or what was billed) since the meters were replaced. The graph indicates that the District has improved its overall water loss over recent years.

Graph 1.2 – Percentage of Water Loss



Losses are controlled through the following means:

SCADA System: Each storage reservoir is equipped with a SCADA system that provides continual monitoring of water storage. In the event there are issues with the pressure or levels of water, the District's designated employees are immediately alerted and able to quickly resolve the issue.

Internal Audit: The District internally audits and monitors each zone weekly to ensure water usage remains consistent. When readings indicate higher than normal outflows, the staff investigates and repairs the issue(s). In addition to this, the District conducts a monthly audit of the amount of water billed verse the amount of water used. These audits are independent of and in addition to the District's annual fiscal budget audit.

Meters on Hydrants: The District requires all contractors using fire hydrants as water sources for their project to meter and pay for all water used. This helps to ensure the water is accounted for and the District is paid accordingly. If a contractor is found using a fire hydrant without a meter, the District considers this to be theft of service and imposes a $500.00 fine.

INCREASING RATE STRUCTURE

The following table outlines the current water rate schedule adopted by Resolution and effective on January 1, 2015. The base allotment each month is less than 1,000 gallons. For every 1,000 gallons used thereafter, an additional fee is assessed on a tiered schedule that increases in correlation with the use.

Table 1.4 - Water Rate Schedule

Connection	$ Base Rate / Month	Allotment (Gal)	Additional Fee / 1,000 Gal
Monthly Rate	$20.00	<1,000 gal	-
		1,000 – 10,000	$0.50
		10,001 – 15,000	$3.00
		15,001 – 20,000	$3.50
		20,001 – 999,999	$4.00
Browning Water Rate (2 Homes)	$40.00	<1,000 gal	-
		1,000 – 10,000	$0.50
		10,001 – 20,000	$0.50
		20,001 – 30,000	$4.00
		30,001 – 40,000	$4.50
		40,001 – 999,999	$5.00
Hydrant Meters	$100.00	<1,000 gal	-
		1,000 – 10,000	$1.50
		10,001 – 15,000	$3.00
		15,001 – 20,000	$3.50
		20,001 – 999,999	$4.00

WATER USE

Table 1.5 below shows the potable water inflow verse the water outflow for each type of use from 2005 through 2018.

Table 1.5 – Potable Water Use*

Year	INFLOW	OUTFLOW					% Diff.
	Total (AF)	Res.	Com.	Ind.	Inst.	Total (AF)	
2005	273.4	200.36	49.06	0	23.96	273.38	0.01
2006	128.8	237.2	32.9	19	0	289.10	-124.46
2007	195.7	240.77	59.61	0	0	300.38	-53.49
2008	249	235.46	66.77	0	0	302.23	-21.38
2009	254.8	222.36	58.59	0	0	280.95	-10.26
2010	257	218.06	47.95	0	0	266.01	-3.51
2011	282.8	214.88	48.98	0	0	263.86	6.70
2012	323.9	223.73	50.8	0	0	274.53	15.24
2013	318.1	218.84	55.26	0	0	274.10	13.83
2014	305.6	205.82	58.02	0	0	263.84	13.66
2015	333.2	198.77	74.52	0	0	273.29	17.98
2016	325.6	187.12	80.56	0	4.59	272.27	16.38
2017	296.6	188.59	74.15	0	3.78	266.52	10.14
2018	289.7	187.94	76.32	0	3.81	268.07	7.47

*Information obtained from Utah Division of Water Rights Water Records/Use Information

During the years 2005 to 2010 there were meter malfunction issues which caused inaccurate numbers reported to the State. During these years, the analysis shows that more water was used than what came into the system which is not accurate. All meters were subsequently replaced within the system and an analysis of the system beginning in 2011 is a more accurate portrayal of actual conditions. This analysis shows an average loss (deficiency) of 12.68% per year in the distribution system between 2011 and 2018. The goal of the District is to reduce losses even further as additional improvements are made to the water infrastructure.

Non-potable Water

The District does not provide or monitor non-potable water (secondary) as this is provided through and monitored by the Weber Basin Water Conservancy District. Using culinary water for irrigation purposes is prohibited within the District.

USE - GALLONS PER CAPITA PER DAY

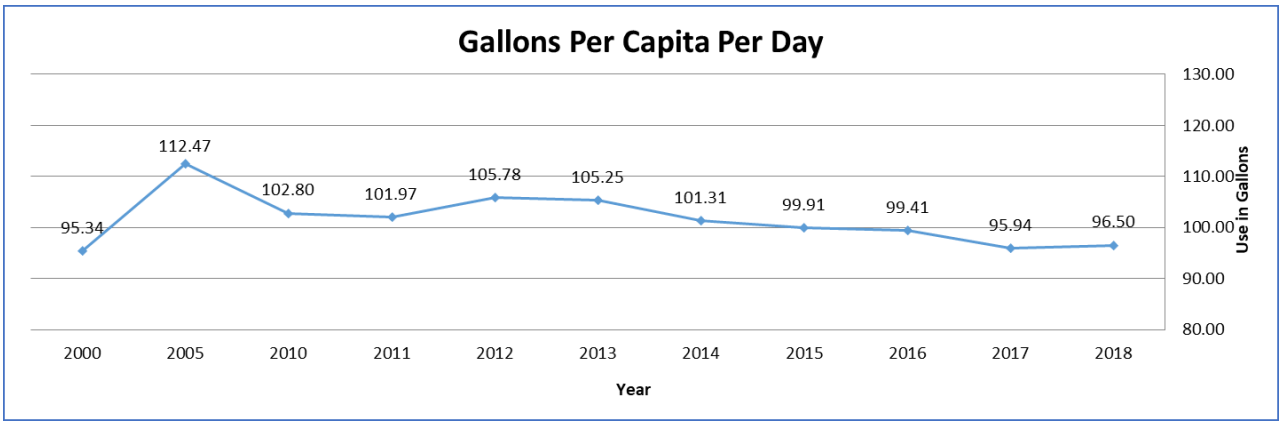
Table 1.6 below illustrates the gallons per capita per day by type of connection for 2018. UHID does not provide or measure secondary water, this is done independently through the Weber Basin Water Conservancy District. All UHID connections must utilize secondary water for outdoor use.

Table 1.6 – 2018 GPCD by Use Type

	Indoor (Annual Use)	Potable (Outdoor)	Non-Potable (Secondary)	Total
Residential	67.65	NA	NA	67.65
Commercial	27.48	NA	NA	27.48
Institutional	1.37	NA	NA	1.37
Industrial	0	NA	NA	0
Total	96.5	-	-	96.5

Graph 1.3 below illustrates the Gallons per Capita per Day Use trend, indicating an overall decrease in water use and increase in conservation.

Graph 1.3 – Gallons Per Capita Per Day



STORAGE RESERVOIRS

The adopted storage level of service for the District is approximately 400 gallons per Equivalent Residential Connection (ERC). The District has four storage reservoirs in service that together can hold 1,900,000 gallons of water (See Table 1.3). Per State law, of this amount, 780,000 gallons has been designated as fire storage. As shown in the table, the District has adequate storage to provide for the projected build-out amount of 1,670 ERCs.

Table 1.3 - Storage Reservoir Capacity

Name	Capacity (gal)	Total ERUs Served
Reservoir #2	200,000	500
Reservoir #3	200,000	500
Reservoir #4	500,000	1,250
Reservoir #5	1,000,000	2,500
Total	1,900,000	4,750
Excluding Fire	1,120,000	2,800

SECTION 2 – CONSERVATION PRACTICES

CURRENT CONSERVATION

The Uintah Highlands Improvement District places a high value on the conservation of water and is already practicing the following:

- Water is conserved by running spring water from Reservoir #2 through the distribution system to Reservoirs #4 and #5 allowing maximum use of spring water at peak flow times.

- UHID has replaced all water meters with radio-read meters. This allows the District to obtain meter readings every month and detect possible leaks on each service as well as obtain accurate data for the water budget. Commercial meters have also been replaced as deemed necessary.
    - District employees monitor the water use in each zone weekly and meters are read monthly. When excessive use is detected, the owner of the connection is contacted by sending a letter of warning of a potential leak. If the reading shows an extremely high usage for the month, the customer is called directly.

- The District provides public water conservation education through fliers in customer statements and in the annual Consumer Confidence Report.

- The District maintains memberships in supporting organizations such as American Water Works Association, Water Environment Federation and The Rural Water Association that educate our personnel and keep up to date on source protection, public education and current regulations.

- The current water pricing and billing system was updated and adopted by resolution in January 2015. The new pricing and billing is adequate to cover expenses in the water enterprise account and is tiered so as to discourage excessive water use. The District may consider additional water pricing and billing system updates as needed.

- The District continues to complete infrastructure projects identified in the Capital Improvement Plan.

CONTACT

The following individuals are responsible for meeting efficiency goals:

Board of Trustees:
Chairman, William J. Galbraith III
bill@bellphoto.com

Vice Chair, Terry W. Hill
Hills4ever@msn.com

Treasurer, Brent W. Innes
Innesbs50@gmail.com

Water Supervisor
Blaine Brough
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(801) 476-0945
Uhid1@qwestoffice.net

Public Relations, Brock Loomis
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c.d.pedersen39@gmail.com

Administrator
Jerilyn Call
2401 E. 6175 S.
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(801) 476-0945
Uhid1@qwestoffice.net

EVALUATION OF EXISTING CONSERVATION EFFORTS

In the 2014 Water Conservation Plan, the District established four goals based upon the issues identified. The goals and status of each are provided below:

Goal 1 – Collect and Analyze Spring Meter Data. The District has recently updated the meters on the springs. This will allow the district to obtain accurate data to perform a water audit which will determine areas of the District to concentrate on for leak detection and inefficiencies. The problem areas will be addressed and notices given if they are not the District's responsibility.

Status: *This goal has been met. The metered data has been submitted to the State each year. The meters are functioning properly and the District Staff continue to monitor and address issues within the entire system.*

Goal 2 – Perform Regular Water Audits. The District routinely performs water audits that will allow us to gather data for comparison using the newly installed meters on the springs and purchased water from Weber Basin and customer usage from monthly meter readings.

Status: *This is an ongoing goal. As indicated in Section 1, the District monitors water use closely.*

Goal 3 – Leak Detection and Repair. Through the regular water audit, leak detection will be analyzed throughout the entire service area of the District to discover leaks in the distribution system. The District will then plan for a leak repair project to address a portion of those leaks each year.

Status: *This is an ongoing goal. Projects to repair leaks have been completed as well as projects to repair existing storage reservoirs. The District is working to implement the projects identified in the Capital Facilities Plan.*

Goal 4 – Update Water Billing Rates. The District has been working on outreach to residents to reduce water usage and to implement water conservation incentives to encourage conservation. The goal is to reduce indoor water use per capita by 15% over the next three to five years.

Status: *The water rates were updated in 2015 to a tiered structure that discourages high water use. As indicated in the Gallons Per Capita Per Day (Graph 1.2), the District has begun to decrease its per capita day use. While it is not yet to the 15% goal, there is a steady decline in use with a decrease of 3.41% since implementing the rate change in 2015.*

NEW BEST MANAGEMENT PRACTICIES & IMPLEMENTATION PLAN

In addition to continuing existing practices and implementing the Capital Facilities Plan, the District plans to also:

- **Create a Meter Replacement Plan.** This proactive plan will be a phased approach to annual replacement of the entire system's meters. The District informally began this process in 2018 when 300 of the existing meters were replaced due to faulty parts. By creating a formal plan, the District will better be able to track meter installment dates and adequately budget each year for this project.

CONSERVATION GOALS

According to the 2019 report: *"Utah's Regional M&I Water Conservation Goals"*, the statewide water use is 240 gallons per capita per day (GPCD) and the goal is to reduce this amount to 202 GPCD by the year 2030. Of the current use, 57 GPCD is attributed to residential secondary water use which leaves 183 GPCD for residential, industrial, commercial, and institutional combined. As shown in this report, the current water use in the District is 97 GPCD which is significantly lower than the statewide use.

While the current water use in the District is lower than the State and Regional conservation goal, the District will continue their conservation efforts and has the following goals:

- **Decrease the percentage of water loss in the system to 10% by 2030.** The average annual loss over the previous five years is 13.13%. The District can accomplish this goal by continuing regular water audits, leak detection and repair, and implementing the meter replacement plan.
- **Reduce indoor water use by 5% by 2030.** This can be accomplished through public outreach, leak detection notices, and continuation of the tiered water rate structure. This goal is an update to Goal #4 from the 2014 Plan and reflects a more realistic reduction considering existing use and the fact that the system does not provide for outdoor water use.

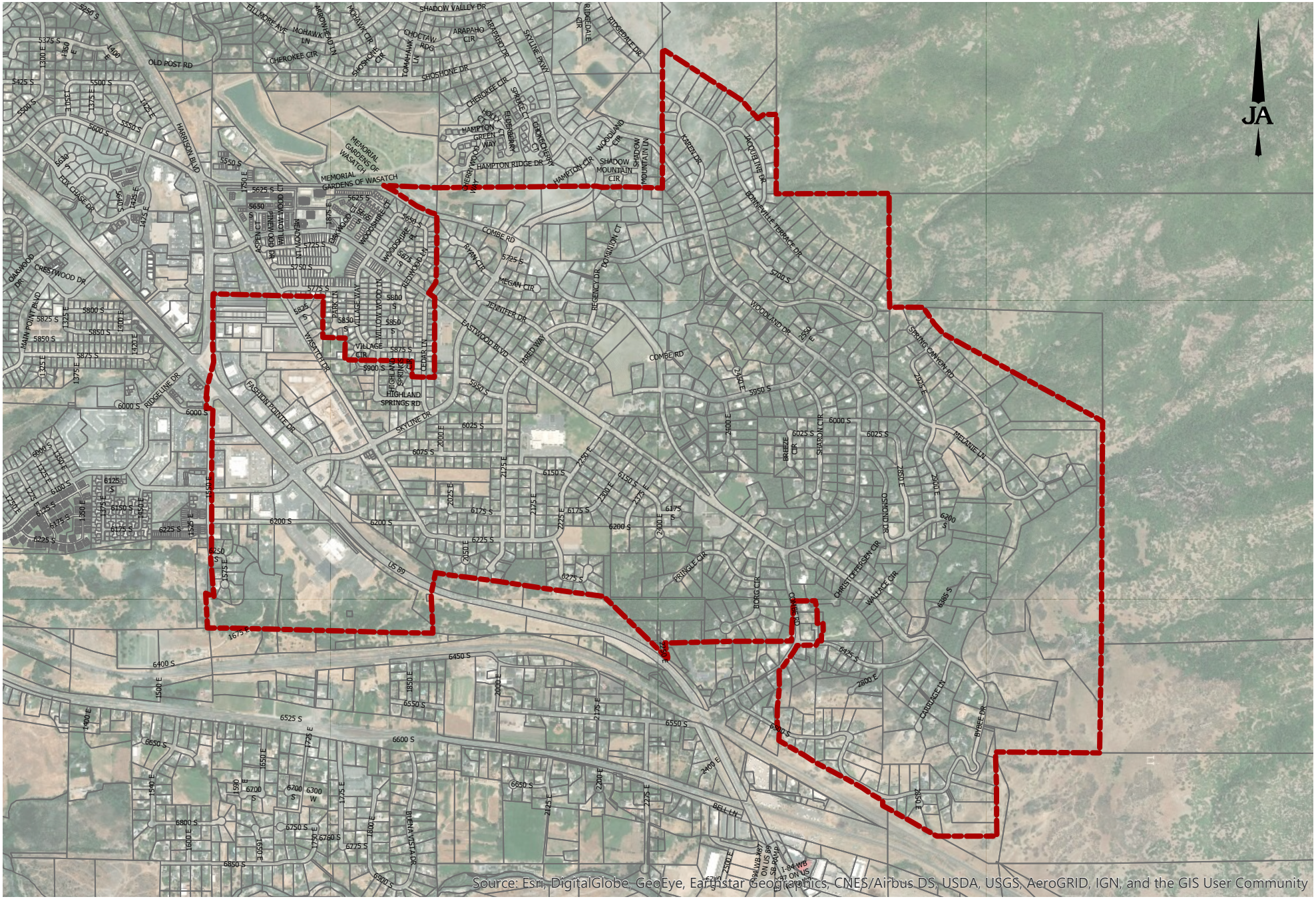
PUBLIC INFORMATION, EDUCATION, & PROGRAMS

The District currently provides regular information to residents and educates them on wise watering practices through monthly statements and as part of the annual Consumer Confidence Report (see attached CCR). This method of water conservation education encourages each resident to take responsibility for their water use.

ORDINANCES & STANDARDS IN PLACE

The following ordinances and standards have been adopted and are currently in place:

- Water Conservation Plan, 2014
- Public Work Standards and Technical Specifications, 2007



JONES & ASSOCIATES CONSULTING ENGINEERS

1716 East 5600 South
South Ogden, Utah 84403 (801) 476-9767

SCALE: 1:18,000

DATE: 9/25/2019

UINTAH HIGHLANDS IMPROVMENT DISTRICT

CULINARY WATER SYSTEM MAPPING

SERVICE AREA MAP

SHEET: 1 OF 1 SHEETS

0

Conservation

Water conservation measures are an important first step in protecting our water supply. Such measures not only save the supply of our source water, but you can also save money by reducing your water bill. Here are a few suggestions:

- Take shorter showers
- Use water-saving nozzles
- Wash full loads of laundry
- Run dishwasher only when full
- Repair leaks in faucets and hoses
- Do not use toilet for trash disposal

Monthly Meetings

We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held at the district office on the third Thursday of every month beginning at 5:30 p.m. Please call our office 801-476-0945 to verify meeting time and location.

Questions?

If you have any questions about this report or concerning your water utility, please contact our office at 801-476-0945. Our office is open weekdays, Monday – Thursday from 8:00 AM to 5:00 PM and Friday from 8:00 AM to 4:00 PM.

Uintah Highlands ID
2401 E 6175 S, Ogden, UT

2018 DRINKING WATER QUALITY REPORT

Uintah Highlands UHID Improvement District

Policy

Regarding Culinary Water

Use of Culinary Water for Irrigation is Prohibited. It is unlawful for any person, whether owner or occupant, of any residential or agricultural property, which can be served by secondary water system to use culinary water from the district for the purpose of irrigating any yard, garden or lawn.

Goal

Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. This report shows our water report and what it means to you our customer.

Water Source

We're pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality of the water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. Our water sources have been determined to be from groundwater sources. Our water sources are Dry Canyon Spring, Combe Well, Combe Spring, and Quaking Aspen Spring. We also purchase water from Weber Basin WCD-Central.

Protection Plan

Our sources have been determined to have a low level of susceptibility from potential contamination. We have also developed management strategies to further protect our sources from contamination. Please contact us if you have questions or concerns about our source protection plan.

Water System Connections

There are many connections to our water distribution system. When connections are properly installed and maintained, the concerns are very minimal. However, unapproved and improper piping changes or connections can adversely affect not only the availability, but also the quality of the water. A cross connection may let polluted water or even chemicals mingle into the water supply system when not properly protected. This not only compromises the water quality but can also affect your health.

Improper connection

Proper connection

Did you know?

That unprotected garden hose lying in the puddle next to the driveway is a cross connection. The unprotected lawn sprinkler system after you have fertilized or sprayed is also a cross connection. When the cross connection is allowed to exist at your home, it will affect you and your family first.

We Care About You

At Uintah Highlands Improvement District we work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life, and our children's future. Do not make or allow improper connections at your homes. If you'd like to learn more about helping to protect the quality of our water, call us for further information about ways you can help; 801-476-094**5.**

Who's at Risk?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care providers about drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Uintah Highlands ID is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.